

## CLAIMS

1. A motor mounting platform for use in a small appliance such as a vacuum cleaner, the motor mounting platform constructed of a first material and comprised of at least two brush holders constructed of a second material removably engaged to the platform.

2. The motor mounting platform of claim 1 wherein the second material is electrically non-conductive.

3. The motor mounting platform of claim 1 wherein the first material has a lower thermal classification than the second material.

4. The motor mounting platform of claim 1 further comprised of:  
at least one motor support mounted to the platform; and  
at least two pair of brush holder guides mounted directly to receivably engage the brush holders.

5. The motor mounting platform of claim 4 wherein:  
the platform has a first side and a second side; and  
the second side includes a cavity surrounded by an edge;

6. The motor mounting platform of claim 5 wherein at least one motor support is mounted on the first side.

7. The motor mounting platform of claim 5 wherein the plurality of brush holder guides are mounted on the first side.

8. The motor mounting platform of claim 5 wherein the cavity has an involute shape.

9. The motor mounting platform of claim 4 wherein the motor support includes a first post and a second post.

10. The motor mounting platform of claim 9 wherein the first and second post are mounted opposite of each other around a hole defined in and extending through the platform.

11. The motor mounting platform of claim 4 wherein a motor is attached to the at least one motor support in such a manner that the mounting platform is without electrical contact from the motor.

12. The motor mounting platform of claim 1 wherein an exhaust outlet extends from the mounting platform.

13. The motor mounting platform of claim 12 wherein the exhaust outlet is integrally molded with the mounting platform.

14. The motor mounting platform of claim 4 wherein the guides are mounted on opposite sides of a hole extending through the platform.

15. The motor mounting platform of claim 4 wherein the brush holder guides are comprised of a pair of inverted L-shaped guides, each L-shaped guide opposing the other.

16. The motor mounting platform of claim 4 wherein a stop bar capable of engaging a brush holder is mounted into the platform between each at least one pair of brush holder guides and a hole which extends through the platform.

17. The motor mounting platform of claim 16 wherein the brush holder is comprised of:  
a housing having an opening extending lengthwise between a first end and a second end;  
a top side including a first slot in communication with the opening and a second slot in communication with the opening and perpendicular to the first slot;  
a bottom side opposite the top side; and  
a first side and a second side opposite of each other and perpendicular to both the first and second ends and the top and bottom sides.

18. The motor mounting platform of claim 17 wherein:  
the first side and the second side of the brush holder are a first length;  
the first end and the second end of the brush holder are a second length; and  
the first length is longer than the second length.

19. The motor mounting platform of claim 17 wherein:

the top side of the brush holder has a first width;

the bottom side of the brush holder has a second width; and

the second width is greater than the first width.

20. The motor mounting platform of claim 17 wherein the first and second sides of the brush holder each have a bottom edge adapted to be positioned within the inverted L-shaped guides.

21. The motor mounting platform of claim 17 wherein the bottom side includes a notch capable of engaging the stop bar.

22. The motor mounting platform of claim 17 wherein the brush holder is further comprised of:

a commutating brush positioned within the opening, the commutating brush having a first end and a second end with the first end being capable of contacting a commutator of a motor;

a wire attached to the second end of the commutating brush;

a spring contacting the second end of the commutating brush and encircling the wire; and

a lead located in the second end of the brush holder opposite the commutator and the commutating brush, the lead contacting the wire and the spring.

23. The motor mounting platform of claim 22 wherein the commutating brush is constructed of carbon.

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24. The motor mounting platform of claim 4 wherein the motor support and the guide slots are integrally molded with the mounting platform.

25. The motor mounting platform of claim 4 wherein the motor support contacts the guide slots.

26. The motor mounting platform of claim 4 wherein wire guides are connected to platform.

2020-0022001

27. In combination, a motor mounted to a motor mounting platform having a hole, the motor having a shaft extending therethrough, the motor mounting platform comprised of:

- at least one motor support mounted to the platform;
- at least two pair of brush holder guides mounted directly to the platform;
- at least two brush holders constructed of electrically non-conductive material, the at least two brush holders each removably engaged to the platform within a pair brush holder guides, the brush holders comprised of:

- a commutating brush positioned within an opening in the brush holder, the commutating brush having a first end and a second end with the first end being capable of contacting a commutator of a motor;

- a wire located within the opening, the wire attached to the second end of the commutating brush;

- a spring positioned between the second end of the commutating brush and the second end of the brush holder, the spring encircling the wire; and

- a terminal located in the second end of the brush holder opposite the commutating brush, and in contact with the wire.

28. The combination of claim 27 wherein the commutating brush is constructed of carbon.

29. A method for manufacturing a commutator brush assembly having a commutating brush within a commutator brush holder, the method comprising the steps of:

providing a commutator brush holder having an opening between a first end and a second end in which the opening receives a commutator brush and a top side having a first slot therealong in communication with the opening; and

positioning a lead wire for connecting to the commutator brush through the first slot.

30. The method of claim 29 further comprising:

connecting a first end of a lead wire to a terminal lead;

encircling the lead wire with a spring;

securing a second end of the lead wire to an end of the commutating brush;

placing the commutating brush within the opening at the first end of the commutator brush holder such that the lead wire is aligned within the first slot;

sliding the lead wire along the length of the first slot; and

securing the terminal lead to the brush holder.

31. The method of claim 29 further comprising the step of:

providing a second slot in the top side, the second slot in communication with the opening and perpendicular to the first slot; and

securing the terminal lead within the second slot.

32. The method of claim 31 further comprising sliding the lead wire along the length of the first slot until reaching the second slot.

33. The method of claim 31 wherein the second slot is adjacent to the second end of the brush holder.

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